

REMARKS

The Office Action mailed June 1, 2006, has been received and reviewed. Claims 1, 3-9 and 11-23 are currently pending in the application. Claims 1, 3-9 and 11-23 stand rejected. Applicant has amended claims 1 and 16, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,716,534 to Tsuchiya et al. in view of U.S. Patent Publication No. 2002/0139665 to DeOrnellas et al.

Claims 1, 5 through 9, 11, 14 through 17, 22 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al (U.S. Patent No. 5,716,534) in view of DeOrnellas et al. (U.S. Patent Publication No.2002/0139665). Applicant respectfully traverses this rejection, as hereinafter set forth.

Claim 1

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of amended independent claim 1 is improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Applicant's presently amended independent claim 1 recites:

1. A plasma reactor, comprising:
first, second and third power generators wherein the first power generator is coupled to an upper electrode and *the second and third power generators are coupled to a lower electrode, the first, second and third power generators being frequency-based power generators*; and
a controller configured to individually selectively activate the first, second and third power generators to a plurality of activation configurations during a corresponding plurality of phases of a duty cycle of a process. (Emphasis added.)

The Office Action alleges:

Tsuchiya et al do not teach two power generators coupled to lower electrode.
DeOrnellas et al teach (Figures 1) *two power generators 32, 34* coupled to lower electrode 28 (DeOrnellas et al-Paragraphs 023-0025). (Office Action, p. 3; emphasis added)

Applicant respectfully disagrees that the cited references teach or suggest all of the claimed elements of Applicant's invention as presently claimed. Assuming for the sake of argument that the Tsuchiya reference teaches or suggests as the Office Action alleges, the DeOrnellas publication reference does not teach or suggest as alleged in the Office Action.

The DeOrnellas publication reference teaches or suggests a "power supply 34" that is clearly a direct current (DC) based power supply and not a "*frequency-based power generator*" as claimed by Applicant. The DeOrnellas publication reference specifically teaches or suggests the nature of "power supply 34" in only two specific recitations, namely,

"[a]lso connected to the bottom electrode 28 is a DC power supply 34" (paragraph 0024)' and

"[d]uring the above over-etch process, the plasma power supply 30 is turned down and the DC bias 34 is lowered" (paragraph 0046).

Clearly, the "power supply 34" as taught or suggested in the DeOrnellas publication reference is not a "*frequency-based power generator*" as claimed by Applicant. Applicant respectfully submits that any proposed combination of the Tsuchiya reference and the DeOrnellas publication reference does not teach or suggest the claim limitations calling for "*the second and third power generators are coupled to a lower electrode, the first, second and third power generators being frequency-based power generators*", as claimed by Applicant. Accordingly,

since the Tsuchiya reference and the DeOrnellas publication reference, either individually or in any proper combination, do not teach or suggest Applicant's invention as presently claimed in amended independent claim 1, such cited reference cannot render obvious under 35 U.S.C. §103 Applicant's invention as presently claimed.

Therefore, Applicant respectfully requests the rejection of claim 1 be withdrawn.

Claims 5-9, 11, 14, 15

The nonobviousness of amended independent claim 1 precludes a rejection of claims 5-9, 11, 14 and 15 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to amended independent claim 1 and claims 5-9, 11, 14 and 15 which depends therefrom.

Claim 16

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejection of amended independent claim 16 is improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Applicant's presently amended independent claim 16 recites:

16. A plasma reactor, comprising:
a vacuum chamber including upper and lower electrodes therein;
first, second and third power generators wherein the first power generator is coupled to an upper electrode and *the second and third power generators are coupled to a lower electrode, the first, second and third power generators being frequency-based power generators*; and
a controller configured to individually selectively activate the first, second and third power generators to a plurality of activation configurations during a corresponding plurality of phases of a duty cycle of a process. (Emphasis added.)

As previously stated, the Office Action alleges:

Tsuchiya et al do not teach two power generators coupled to lower electrode.
DeOrnellas et al teach (Figures 1) *two power generators 32, 34* coupled to lower electrode 28 (DeOrnellas et al-Paragraphs 023-0025). (Office Action, p. 3; emphasis added)

Applicant herein sustains the above-proffered arguments regarding the lack of teaching or suggestion in the DeOrnellas publication reference of “*the second and third power generators are coupled to a lower electrode, the first, second and third power generators being frequency-based power generators*” as claimed in Applicant’s amended independent claim 16.

As stated, the DeOrnellas publication reference teaches or suggests a “power supply 34” that is clearly a direct current (DC) based power supply and not a “*frequency-based power generator*” as claimed by Applicant. The DeOrnellas publication reference specifically teaches or suggests the nature of “power supply 34” in only two specific recitations, namely,

“[a]lso connected to the bottom electrode 28 is a DC power supply 34” (paragraph 0024)’ and

“[d]uring the above over-etch process, the plasma power supply 30 is turned down and the DC bias 34 is lowered” (paragraph 0046).

Clearly, the “power supply 34” as taught or suggested in the DeOrnellas publication reference is not a “*frequency-based power generator*” as claimed by Applicant. Applicant respectfully submits that any proposed combination of the Tsuchiya reference and the DeOrnellas publication reference does not teach or suggest the claim limitations calling for “*the second and third power generators are coupled to a lower electrode, the first, second and third power generators being frequency-based power generators*”, as claimed by Applicant. Accordingly,

since the Tsuchiya reference and the DeOrnellas publication reference, either individually or in any proper combination, do not teach or suggest Applicant's invention as presently claimed in amended independent claim 16, such cited reference cannot render obvious under 35 U.S.C. § 103 Applicant's invention as presently claimed.

Therefore, Applicant respectfully requests the rejection of claim 16 be withdrawn.

Claims 17, 22, 23

The nonobviousness of amended independent claim 16 precludes a rejection of claims 17, 22 and 23 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to amended independent claim 16 and claims 17, 22 and 23 which depends therefrom.

Obviousness Rejection Based on U.S. Patent No. 5,716,534 to Tsuchiya et al. in view of U.S. Patent Publication No. 2002/0139665 to DeOrnellas et al., as applied to claim 1, and further in view of U.S. Patent No. 6,492,280 to DeOrnellas et al.

Claims 3, 4, 12, 13, 18 through 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al (U.S. Patent No. 5,716,534) in view of DeOrnellas et al. (U.S. Patent Publication No. 2002/0139665), as applied to claim 1, and further in view of DeOrnellas et al. (U.S. Patent No. 6,492,280).

Claims 3, 4, 12, 13

The nonobviousness of amended independent claim 1 precludes a rejection of claims 3, 4, 12 and 13 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to amended independent claim 1 and claims 3, 4, 12

and 13 which depends therefrom.

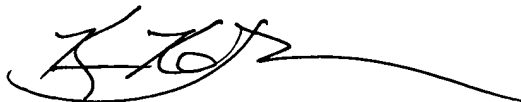
Claims 18-21

The nonobviousness of amended independent claim 16 precludes a rejection of claims 18-21 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to amended independent claim 16 and claims 18-21 which depends therefrom.

CONCLUSION

Claims 1, 3-9 and 11-23 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



Kevin K. Johanson
Registration No. 38,506
Attorney for Applicant
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

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KKJ/sfc:lmh
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